Title (en)

METHOD AND APPARATUS FOR AUTONOMOUS, IN-RECEIVER PREDICTION OF GNSS EPHEMERIDES

Title (de)

VERFAHREN UND VORRICHTUNG ZUR AUTONOMEN EMPFÄNGERINTERNEN VORHERSAGE VON GNSS-EPHEMERIDEN

Title (fr)

PROCÉDÉ ET APPAREIL POUR LA PRÉDICTION AUTONOME INTRA-RÉCEPTEUR D' ÉPHÉMÉRIDES DE GNSS

Publication

**EP 2324371 A4 20111221 (EN)**

Application

**EP 09822368 A 20090821**

Priority

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Abstract (en)

[origin: US2010060518A1] Methods and apparatus for autonomous in-receiver prediction of orbit and clock states of Global Navigation Satellite Systems (GNSS) are described. Only the GNSS broadcast message is used, without need for periodic externally-communicated information. Earth orientation information is extracted from the GNSS broadcast ephemeris. With the accurate estimation of the Earth orientation parameters it is possible to propagate the best-fit GNSS orbits forward in time in an inertial reference frame. Using the estimated Earth orientation parameters, the predicted orbits are then transformed into Earth-Centered-Earth-Fixed (ECEF) coordinates to be used to assist the GNSS receiver in the acquision of the signals. GNSS satellite clock states are also extracted from the broadcast ephemeris and a parametrized model of clock behavior is fit to that data. The estimated modeled clocks are then propagated forward in time to enable, together with the predicted orbits, quicker GNSS signal acquision.

IPC 8 full level

**G01S 19/27** (2010.01)

CPC (source: EP KR US)

**G01S 19/27** (2013.01 - EP KR US)

Citation (search report)

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